

B. REMARKS AND ARGUMENTS**Claim Rejections Under 35 U.S.C. § 103**

In the non-final action dated March 17, 2008, the examiner allowed Claims 1-22 and 24-38, but rejected Claim 23 as being obvious 4,340,163 (Romashov). Applicant respectfully traverses the rejection of Claim 23, on the basis of the following alternative arguments.

Argument #1

In the non-final action, the examiner states that Abbey III teaches a method of removing burrs from the interior surface of a slotted metal liner by passing a cutting tool through the liner while rotating the liner relative to the cutting tool. The examiner further states that Abbey III thus teaches all aspects of Claim 23 in the instant application except for particulars of the cutting tool, and further states that Romashov teaches a cutting tool meeting all the requirements of Claim 23. On this basis, the examiner concludes that it would have been obvious to a person of ordinary skill in the art to combine the teachings of Abbey III and Romashov to come up with the invention defined in Claim 23.

However, it is readily apparent upon review of the Romashov patent that the Romashov apparatus is not in fact adaptable for use with the apparatus of Abbey III.

Romashov discloses an apparatus for removing internal “flash” from electric-welded pipe. Although Romashov does not go into detail about the manufacture of electric-welded pipe, persons skilled in the field will recognize that this well-known process involves rolling a strip of sheet steel to form a cylindrical shape, and making a longitudinal seam weld to join the two edges of the rolled steel sheet.¹ The most common ways of making the longitudinal seam welds are by submerged-arc welding, electric resistance welding (ERW), and induction welding. Regardless of how the seam weld is formed, a certain amount of “flash” (i.e., excess metal protruding beyond the thickness of the parent metal) will generally form along the weld. Removal of internal flash is desirable to improve internal pipe surface properties and thus optimize fluid flow through the pipe.

¹ The sheet stock used in the pipe-making process is commonly referred to as “skelp”; in Romashov, the alternative term “pipe blank” is used.

The apparatus of Romashov removes internal flash by directing two jets of oxygen toward the molten freshly-welded seam, so as to oxidize and remove the still-molten flash from the seam. The apparatus is essentially described at Col. 3, Lines 22-37 of Romashov, as follows:

Referring now to the above drawings, and to FIG. 1 in particular, there is shown therein an apparatus for removing internal flash, which is inserted inside an electric-welded pipe 1 (FIGS. 1 and 2) and comprises a supporting hollow bar 2, an oxygen duct 3, a ferrite-holder 4 of any known design housed in a cooled casing 5, a main nozzle 6 and an additional nozzle 7.

The hollow supporting bar 2 is held inside the pipe 1 being welded by brackets 8 mounted outside the pipe 1 on any fixed part of the pipe manufacturing mill, the brackets 8 and a connecting pipe 9 of the oxygen duct passing between the welded edges of the pipe 1.

The oxygen duct 3 is located concentrically inside the supporting bar 2 and carries at its end an oxygen conduit 10 serving as a supply conduit common to the main 6 and the additional 7 nozzles.

Having regard to this description, as well as Figs. 1 and 2, it is readily apparent that brackets 8 and connecting pipe 9, all of which are stationary in space, are disposed between and project beyond the unwelded longitudinal edges of the sheet material forming the pipe. Relative rotation between the Romashov apparatus and the pipe is thus clearly impossible, due to the brackets and connecting pipe projecting through the gap between the unwelded sheet edges. For the same reason, it is further apparent that the Romashov apparatus can be used only during the process of manufacturing the pipe, and that it would be impossible even to dispose the Romashov apparatus within a finished pipe such as a slotted liner, much less rotate the liner relative to the apparatus.

In accordance with the foregoing analysis, it is respectfully submitted that a person of ordinary skill in the art would not find it obvious to combine the teachings of Abbey III and Romashov to arrive at the invention of Claim 23, because that person would immediately recognize the impossibility of doing so.

Argument #2

Further and in the alternative, it is respectfully submitted that the rejection of Claim 23 under 35 U.S.C. § 103 should be withdrawn because it fails to establish a *prima facie* case of obviousness.

One of the well-established prerequisites for a *prima facie* case of obviousness is that the totality of the prior art references cited in support of an obviousness rejection must teach or suggest all the limitations of the claim in question. Claim 23 incorporates limitations that are not taught or suggested by either Abbey III or Romashov:

- The method of Claim 23 uses a torch head having multiple torch nozzles that receive a flow of a combustible gas mixture to produce a flame. Neither Abbey III nor Romashov teaches the use of flame to remove flash or burrs.
- The method of Claim 23 further incorporates the step of supplying a flow of auxiliary oxidizing gas at each torch nozzle. This step is not taught by either Abbey III or Romashov.

The Romashov apparatus implements oxygen jets inside a pipe, but not in association with a flame, and the Romashov patent does not in any way teach or suggest the use of gas flame nozzles for any purpose inside a pipe. In Romashov, the oxygen jets are effective to oxidize and remove flash from a pipe seam weld only if the molten weld is above a minimum temperature. In the method of the present invention per Claim 23, the supplemental oxidizing gas is effective to increase the temperature and intensity of gas flames in order to burn off unwanted material (e.g., metal burrs), regardless of such material's initial temperature.

Summary

On the basis of either or both of the foregoing Arguments #1 and #2, it is respectfully submitted that the rejection of Claim 23 should properly be withdrawn.

C. CONCLUDING REMARKS

Applicant respectfully submits that the foregoing remarks and arguments fully address all issues raised in the non-final action dated March 17, 2008. Accordingly, Applicant requests timely issuance of a Notice of Allowance.

Respectfully submitted by the Applicant's agent:



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